DATA SHEET

narda

st # 9518

OPERATING INSTRUCTIONS

NARDA MODEL 802B FREQUENCY METER

Spec. I. 270

General Description:

The NARDA Model 802B Freqency Meter is a portable frequency measuring device for the frequency range 2350 to 10,500 megacycles. The frequency range is tuned in two bands, 2350-6750 and 6750-10,500 megacycles. A separate coaxial cavity is used for each band, with a crystal detector built into each cavity to rectify the cavity current at resonance. The crystal current may be observed on the built-in microammeter, or on an external meter or amplifier.

Terminals and Controls:

2350 to 6750 MEGACYCLES - A type N receptacle is the input to the cavity which tunes from 2350 to 6750 megacycles.

6750 to 10,500 MEGACYCLES - A type N receptacle is the input to the cavity which tunes from 6750 to 10,500 megacycles.

TUNING - A crank type knob tunes both cavities simultaneously.

METER - A type BNC receptacle provides for the connection of an external meter or tuned audio amplifier.

METER, EXTERNAL-INTERNAL - A toggle switch connects the crystal to either an external indicator or the built-in microammeter.

SENSITIVITY - A potentiometer is used to vary the sensitivity of the microammeter.

Operation for Transmission Indication:

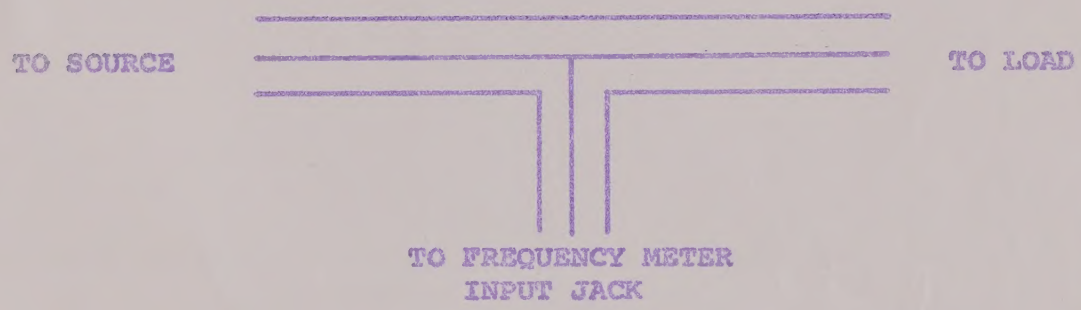
The frequency meter is placed in operation by connecting the source of unknown frequency to the appropriate type N terminal. Throw the METER switch to INTERNAL; turn the SENSITIVITY control to 10; slowly turn the TUNING control until the microammeter deflects. If the meter goes off scale, reduce the sensitivity. Continue tuning until a maximum crystal current is obtained. Read the counter and convert this reading to frequency using the calibration chart in the cover of the instrument.

An external meter should be used when the unknown signal is too weak to deflect the microammeter. A tuned audio amplifier is ideal when the signal is modulated. When this is done, the METER switch should be in the EXTERNAL position.

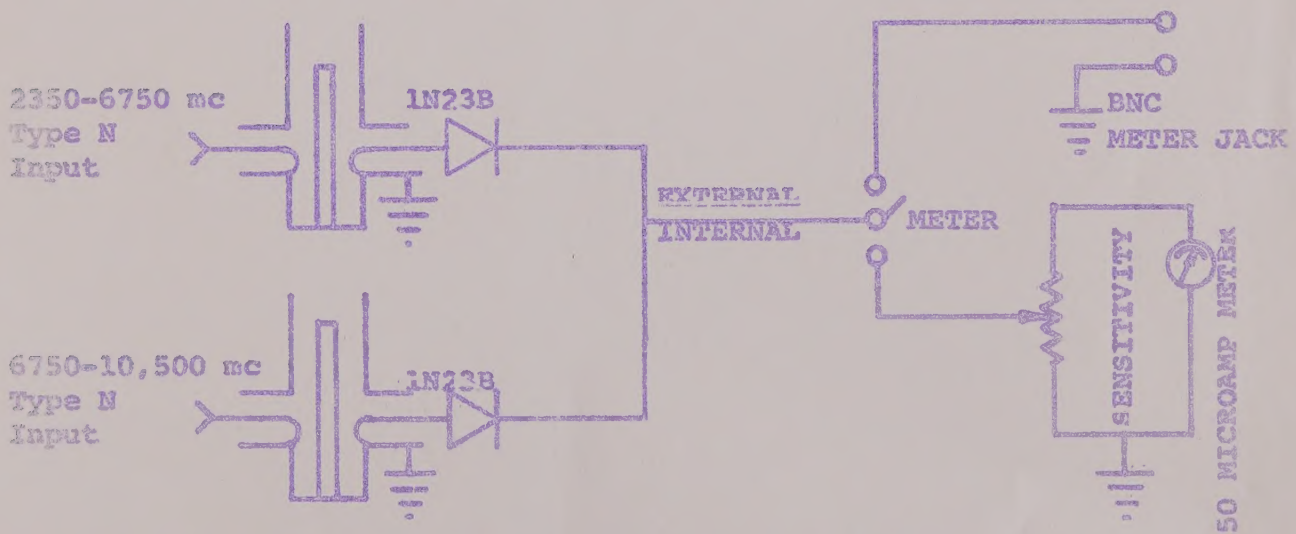
Operation for Reaction Indication:

The instrument may be used as a reaction type frequency meter by the use of a type N Tee section (such as UG-107/U) connected to the input terminal for the appropriate frequency band. The source is connected to one arm of the tee and the load to the other arm. When power is indicated at the load end, slowly tune the frequency meter until the load power dips sharply. This indicates resonance of the cavity. Read the counter and convert to frequency using the calibration chart.

A diagram illustrating the connections for this type of measurement is shown below.



Schematic: The internal wiring of the frequency meter is shown below.



Replacement of Crystals:

Two crystal detectors are used in this frequency meter. A 1N23B is used in each cavity. If either crystal should burn out, this can be determined by observing a reaction indication without being able to detect a transmission indication. To replace a crystal, remove the six knurled screws holding the panel to the box and lift the panel from the box. Then unscrew the black plastic cap supporting the turret solder lug. The crystal is then exposed and may be removed by the fingers. For the most efficient operation replace the crystals with 1N23B crystals. Crystal replacement does not affect the calibration accuracy.